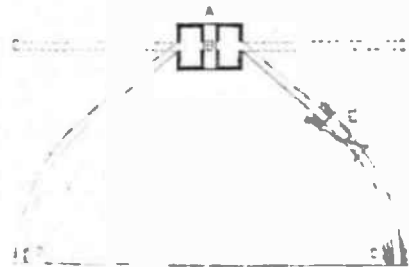


# The Builder.

SATURDAY, NOVEMBER 13, 1852.



LET there be light! and there was light." Divine command; wonderful result! And what light is, and how it acts, we are as unable to say with certainty now, as was the first man on whose astonished eyes it broke in Eden. Call it a specific fluid, or consider it the effect of undulation, it is still a mystery. Its properties have been investigated, and the laws which govern it deduced, but further, philosophy only gropes. Of one of these laws a very remarkable illustration has been recently struck out in Paris by M. Dubosq, known for his philosophical instruments, to exhibit the phenomena of polarised light and other physical experiments, for which a council medal was awarded to him at the Great Exhibition of 1851. What would have been the effect produced in mediæval times on those who might be shown a fountain of scarcely opalescent water, which emitted an intensely bright light where it struck the basin in which it was received, and would do so at any part of the stream if the finger were passed through it? A wave of the hand—and the light was blue; another—and the flash was red. Nothing short of sorcery would have explained it. M. Dubosq, however, as we understand, manages it without demoniacal assistance, and this rude diagram



will, perhaps, enable our readers to understand how. A, shall be the source of the flow, a small metal box supplied by a pipe with water, with an upright opening through it in the middle, B, and four holes in the sides exactly in a line. The two holes in the upright opening are stopped with glass: the two outer holes are open. Charcoal points being inflamed by electricity at B, a ray of brilliant light would, if the box were empty, proceed in the direction C C; light, when transmitted through a uniform medium, always taking a rectilinear course. There is another law, however, to which we must refer, which is, that when light falls on a smooth polished surface, the greater part of it is reflected at an angle equal to the angle of incidence, and then pursues its course in a straight line, unless it meet with some other reflecting surface. In consequence of this, probably, when the water is admitted into our box, A, and flows out through the hole in the side, no light is seen; it is reflected from side to side of the column of water (boxed up in it, so to speak), and only becomes visible where permitted to escape, as at D. Or, if a wine-glass be introduced into the flow, E, a brilliant light will be given off on all sides of it, the colour of which may be altered by means of glasses before the holes at B. The

parabolic curve which the outpouring fluid takes, may have something to do with it too, for the parabola has a property in virtue of which lines drawn from any point in it make equal angles with the curve. But we are not pretending to a scientific investigation of the phenomenon, but simply communicating a very striking fact.

The same investigator, who appropriately rejoices in the additional title of *Soleil* (Dubosq-Soleil), has made some remarkable discoveries with respect to the effect of metals on the spectrum,—the elongated image of the sun or other luminous body formed by a beam of light received through a small hole, and decomposed into its various colours by a prism. Copper produces a certain alteration of colour; zinc, we will say, another variation; and if a mixture of the two be employed, the two variations, as we understand it, are shown so as to establish the nature of the alloy. Into this we will not enter. We recommend the boxed-up light to the active demonstrators at the Polytechnic Institution as being capable of very interesting and effective elaboration. Some extraordinary effects might be produced by it at the new Crystal Palace, with the water power which they will have at command. The supply of water here at a depth of about 300 feet is said to be so considerable that one boring will probably suffice to supply all that will be needed.

The last novelty here determined on by the directors is one that will interest our readers. It was originally intended that the Nineveh Court should consist simply of casts of the various wonderful relics which have been obtained by Layard and Botta. At the suggestion of Mr. Fergusson, however, the directors have determined on reproducing an Assyrian palace, on the theory propounded by that gentleman, and set forth in our pages some time ago. The restoration determined on is that of the palace court at Khorsabad, which forms the frontispiece of Mr. Fergusson's book, "*The Palaces of Nineveh and Persepolis Restored.*" It will perhaps be 120 feet long and 40 feet high, with the upper chambers formed on the thickness of the wall, and the projecting cornice profusely chromatised. The bulls, to be modelled for the purpose, will be much larger than those in the British Museum. It cannot fail to form a very striking feature in the Exhibition.

From France we hear, notwithstanding the liberality which some of the Paris papers spoke so much of a few weeks ago, and contrasted with an untrue statement respecting the trustees of our Museum, that the authorities at the Louvre have refused to allow casts of the Assyrian monuments to be made for the new Crystal Palace. Various letters have been addressed to them by some leading English statesmen, and we may expect the prohibition will ultimately be withdrawn. We are led to anticipate that the collection of casts and models which is being formed abroad will prove of great value to art in this country.

The works are progressing at Sydenham, but at present not much show has been made. The district surveyor, official referees, and commissioners of sewers have come into the field to see how they can assist in accelerating.

In connection with sewers, as we are "booking new things," we will mention here that a company is in course of formation to

carry out what seems to us a very promising idea. Cream of lime, as our readers know, mixed with sewage water, causes a deposition of all the solid matter the latter may contain, so complete indeed that the water is made perfectly pure and tasteless, and, moreover, singularly well adapted, it is said, for dyeing and other industrial purposes. Various endeavours have been made with more or less success to dry rapidly the residuum: if by simple evaporation, a long time is required, and artificial heat is of course expensive. It occurred to Mr. Wicksteed to apply to it the principle of the "Wringing Machine," whereby wet clothes, being made to revolve rapidly, are deprived of their moisture by the centrifugal action in something less than no time. The new application (patented) is said to be perfectly successful. When the deposition is effected, and the purified water passed off, the mud is lifted by a simple mechanical arrangement into a cylinder of metal gauze turning on a vertical axis, within an outer chamber, and, rapid motion being given to it, the water flies off through the gauze and falls to the bottom, while the solid matter, in the course of a few minutes, is left perfectly dry in the cylinder, and is thence removed for use, by a piston working with the rest of the machinery. We do not pretend to say what effect the process may have upon the quality of the manure, what changes in its constituents may be made by the lime, but this of course will be ascertained. If the result be satisfactory in this respect, and our information be correct, we are disposed to think we have here the solution of a difficult question, involving most important results, especially if the operation can be conducted without offence to nose. Machines would be put up at the disemboguing of sewers, the defilement of our streams prevented, and the cost of fertility be lessened. What poisons in the river will produce the means of life in the fields.

The great command still operates.—

Let there be light.

## SOME OF THE PRINCIPLES OF DESIGN IN ARCHITECTURE.—HAVING PARTICULAR REFERENCE TO ECCLESIASTICAL EDIFICES.

ONE of the results of our blind reverence for antiquity, and of the extravagant influence of precedent, has been forgetfulness of those unchanging principles by the application of which we can alone arrive at real beauty in architecture. Antiquarian research into the art of the past, discrimination of distinctions in style, anxiety after chronological truth in the recombination of ancient elements, have, indeed, left little time or inclination for study of what constitutes architecture itself,—for gaining a knowledge of those laws that are binding upon all styles, and that cannot be suspended in favour of any; and consequently ignorance of the conditions of beauty has produced a multitude of buildings which, however correct in style, do not give full satisfaction. I am not charging this error upon the professor of either of the prevalent styles in particular: both are guilty in this matter: both have mistaken the means for the end. In each school we have seen the most unreasoning search after ancient forms, without inquiry into the æsthetic principles on which they have been produced; and in both we have seen the result,—exuberance of production, but little advancement in art; for I am convinced that thirty or forty years ago, and in other periods when art-styles and their distinctions were less understood, there were produced churches and other works in many important respects superior to those